



June 9, 2018

Mark Simms, Utilities Director
City of Sioux City, Iowa
405 6th Street
Sioux City, Iowa 51102

Re: Big Ox Energy-Siouxland LLC, Compliance Order
IU Permit No.: 2016-31-I Industrial Pretreatment Program

Dear Mr. Simms:

I am writing in response to the City of Sioux City, Iowa (the "City") Notice of Violation ("NOV") sent by letter on June 20, 2018 from Craig Samek and compliance Order (the "Order") sent by letter on June 28, 2018 from Mark Simms to Desiree McCaslen of Big Ox Energy Siouxland LLC ("Big Ox").

The City Order states that Big Ox has:

- a) Failed to Notify the City Publicly Owned Treatment Works ("POTW") of a changed condition per General Permit Condition #6 of the IU permit for failing to notify the City POTW of increased Total Soluble Solid ("TSS") loadings in Big Ox's discharges.
- b) Caused Interference to the City POTW due to excessive TSS loading in Big Ox's effluent as prohibited in City Code 13.07.040.3.a.
- c) Discharged wastes that exceed the design capacity of the POTW per page 12 of the City's NPDES Permit (#97-78-0-01).
- d) Caused interference Per 13.08.090 and failed to pay sewer charges and failed to appropriately operate the Big Ox pretreatment system in violation of the City's Sewer Use Ordinance, punishable under Section 1.04.100 of Sioux City Code.
- e) Bypassed Pretreatment Facilities required by the Enforcement Response Plan, Table V, Item 2.

In combination, the City alleges that these violations satisfy the City's definition of Significant Noncompliance as defined in 40 CFR Part 403.8 (f) (2) (viii).

As you know, BOE is producing renewable natural gas from both waste water and trucked-in feedstocks which would otherwise be landfilled. BOE's plant uses two centrifuges and one GEM to separate the solids as part of the digester process.



In later March, BOE centrifuge capacity was diminished due to the malfunctioning of one centrifuge. At that time, Desiree McCaslen called Craig Samek to provide notification that the centrifuges at the plant had a failure and that facility would be sending an elevated TSS load to the City POTW. BOE sent one centrifuge for overhaul to the vendor and compensated by increasing the other centrifuge's throughput. Soon thereafter, the remaining centrifuge malfunctioned and was also sent to the manufacturer for overhaul.

Around 05/15, BOE purchased presses for solid removal to replace the centrifuges during overhaul. The presses produced filtrate (returned to GEM) of different quality than the centrifuges and the GEM was not optimized for the new filtrate.

To restore operations and effluent quality to design conditions, BOE commissioned a preventative maintenance service from the GEM manufacturer (Clean Water Technologies). Clean Water Technologies also delivered operational training for BOE staff (completed).

BOE also improved/correct GEM operation. BOE commissioned Water Engineering Inc. to optimize GEM chemical dosing (species and rate). BOE upsized the GEM chemical dosing pumps, re-establishing control of the effluent TSS. Lastly, BOE modified the effluent pumps, allowing for internal recycling for further effluent TSS reduction.

BOE's extensive TSS control efforts have been successful: BOE has restored solid separation and is informed and equipped to maintain effluent quality. Because of this, Big Ox is willing to accept the City POTW's proposed TSS limit of 48,509 lbs/day. We would however request that this daily limit be determined using a weekly average.

BOE appreciates that its effluent delivered to the City POTW has had elevated TSS loadings for a period starting in late March due to our mechanical outages. However, BOE hopes that the City can consider recent BOE efforts to mitigate TSS discharge and aggressively restore its operations to design conditions. As the City knows, BOE has been simultaneously focused on recovering its digester from a persistent foaming malfunction. Big Ox therefore respectfully requests that the City POTW surcharges for TSS treatment in May and June 2018 be mitigated to more closely reflect actual, incremental costs incurred by the City POTW for treating Big Ox effluent TSS loadings. We would also like to request a payment schedule that allows these charges to be paid over six months

As for other items, Big Ox respectfully requests the City to explain the calculation for the proposed \$30,000 penalty specified in the Order.



Big Ox remains committed to operating a compliant facility and contributing as a collaborative Siouxland community member and City POTW customer. We have been facing a number of challenges in our operations over the last 60 days which we are focused on resolving. We would welcome the opportunity to meet with the City to discuss and resolve the pending orders.

Thank you.

Very truly yours,

A blue ink signature of Robyn Larsen, consisting of a series of fluid, connected loops and a long horizontal stroke at the end.

Robyn Larsen
CEO – BOE Group, LLC
2620 Development Drive
Green Bay, WI 54311

A black ink signature of Rob Ernest, featuring a large, stylized "R" followed by a series of loops and a long horizontal stroke.

Rob Ernest
GM – Big Ox Energy, LLC
2620 Development Drive
Green Bay, WI 54311